



## 11 o'clock general D&S P3 tips

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- In demand – supply questions, note the units used: price is in dollars, euro or something else? Quantities are kilograms, tons or plain units? Most importantly, are these quantity units, perhaps, thousands or millions?
- If quantities are thousands (of, say, kilos) then remember to multiply your answer by 1000! So, if the equilibrium price you found is, say, \$8 and the equilibrium quantity is 50, then remember the answer is 50 000 kilos.
- If quantities are in thousands or in millions then keep this info in mind and use it *throughout all subsequent calculations* where the quantity figure you found is used; for example, if asked to subsequently calculate producer revenues (or consumer expenditures), don't forget the 3 zeroes; in the example above, total consumer expenditures or total firm revenues will be  $8 \times 50 = 400$ , but your answer should be \$400 000. Same things hold for subsequent calculations of consumer or producer surplus, of tax revenues collected or subsidy expenditures made by a government etc.
- If there is no plot required in a demand and supply question, always sketch a diagram using the numbers found from your calculations so that you can 'visualize' whatever you are asked to further calculate e.g. the change in revenues or, in expenditures or, the size of the consumer/ producer surplus or of changes in these.
- If you are provided with a grid, note the size of each 'step': for example, if the numbers provided on the vertical axis of the exam paper are \$10, \$20, \$20 etc. and there are 5 'steps' in between, then between, say, \$10 and \$20 the values

are \$12, \$14, \$16, \$18. Check out in the November 2014 P3 paper, questions 1 and 2 where 3 grids exist and practice. Count carefully!

- If you are asked to plot a demand and/or a supply function on a provided grid, use a pencil (preferable 2B or 3B so that you can easily *fully* erase errors and so that the line(s) you draw are clearly visible on the scanned version of your script that examiners will see.
- Remember that to plot a straight line you only need two points; one could be the equilibrium (P,Q) point; the other could be any other point. For the 2<sup>nd</sup> point follow the directions below.
- To plot a demand curve, plug in  $P=0$  to find the corresponding  $Q_d$  (the horizontal intercept), or plug in  $Q_d = 0$ , to find the corresponding  $P$  (the vertical intercept); carefully connect the 2 points (the equilibrium point and either of the intercepts or, the two intercepts) and you're done.
- To plot a supply curve, plug in any price you want (but close to the equilibrium price you have found) to find the corresponding  $Q_d$ , i.e. your second point on the grid (the first one being the equilibrium point); carefully connect the 2 points and you're done.
- Don't forget to properly label axes (*and*, the curve(s)).
- If asked to calculate the price at which some specified quantity will be demanded (or, the quantity that will be demanded at some specified price) remember that a demand function (any function) is like a 'box': plug in it the given  $Q_d$  to find the corresponding  $P$ ; or, plug in it the given  $Q_d$  to find the corresponding  $P$ .
- Remember that the slope of a demand function is the coefficient (with the negative sign) of  $P$ ; so, if the demand function is  $Q_d = 20 - 4P$ , then the slope of this demand function is -4.
- Remember that the constant (20 in the example above) denotes the position of the curve on the diagram; it is thus a 'shift factor'; it follows that if this constant increases (decreases) then the demand curve shifts to the right (left)

by the difference between the 2 constant terms; e.g. if the new demand function is  $Q_d = 30 - 4P$ , then the demand curve shifts to the right by 10 units, as at each price consumers will be willing and able to buy 10 more units; if the new demand was  $Q_d = 15 - 4P$ , then the demand curve shifts to the left by 5 units, as at each price consumers will be willing and able to buy 5 fewer units (per period).

- *Beware:* if, for example, you are told that demand (or, supply) at each price is 30 000 more units but you have also been told that quantity is in thousands of units, then just add 30 (*not*, 30 000) to the constant term of the demand (or, supply) function; symmetrically, if you were told that demand (or, supply) is 30 000 fewer units at each price: subtract 30 (*not*, 30 000) from the constant term of the demand (or, supply) function)
- Remember that if the slope of the demand function changes (the coefficient of the P term with its sign), the demand curve will become flatter or steeper. This is a bit tricky because in economics, the independent variable (P) is not on the horizontal (as 'x', is in math) but on the vertical axis. It follows that if the slope of the demand *function* absolutely increases, then the demand *curve* becomes flatter. Sticking with the above example where  $Q_d = 25 - 4P$ , if now the demand *function* becomes  $Q_d = 25 - 6P$ , the demand *curve* will become flatter as the axes are reversed: for each change in P, the resulting change in  $Q_d$ , will be greater. If on the other hand the demand function became  $Q_d = 25 - 3P$ , then the demand curve would become steeper as the axes are reversed: for each change in P the resulting change in  $Q_d$  would be smaller.
- Price control questions are most easy: the maximum price (ceiling) or, the minimum price (floor) is just a straight line you need to draw on the grid (or, on your sketched version); you typically need to calculate the  $Q_d$  and the  $Q_s$  for the given price to calculate the shortage (if it is a ceiling) or the resulting surplus (if it is a floor). Remember that if you were instructed that the quantity of the good is in thousands (or, perhaps, million of units) then all

calculations need to have 3 (or, 6) more zeroes added at the end of a calculation (on revenues (or, changes of); expenditures (or, changes of), changes in consumer or producer surpluses etc.

- Try to solve all related questions from papers and past quizzes we had as well as the exercises/ examples in our S&P volume.